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Engineering Note

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Project:	DAQ GUI
Doc. No:	B020129A-Bagby-DAQ_GUI

Subject:	CRATER.py Version 1.1

CRATER is a python based GUI which allows the DAQ Shifter to easily include or exclude readout crates from a Global run and invoke or revoke Smt Monitoring. This note describes CRATER's features and operating instructions.

Getting Started

To launch CRATER, type the following:

1. setup d0online

2. start_daq crater

Operating premise

When CRATER is launched, checkbuttons are displayed for each system readout crate capable of being used in a DAQ global run. Each system has it's own dedicated page. Each checkbutton is labeled with it's corresponding geographic sector designation (X20), the crate name (l2glb), and a description of what the crate name means (Level 2 Global).

The status of the current configuration is diplayed by a red or gray checkbutton indicator. Red means the crate is IN the run. Gray means the crate is OUT of the run.

Taking a crate "into or out of the run" is accomplished by clicking on the indicator box, associated with a readout crate. The checkbutton will turn either red or gray. Then click the SAVE Configuration for "system" button. Changes to the "system"_readout.xml file are not made until the SAVE button is invoked.

File

Save All :

> This feature cycles through all system pages and generates the "system"_readout.xml file.

Revert to Last Save:

> Reverts the status of the checkbuttons to that of the configuration that was last saved.

Restore from Backup File:

> Restores the status of the checkbuttons from the backup configuration.

Exit:

> Closes CRATER.

VIEW:

Larger:

> This feature increases the size of the window diplaying CRATER.

Smaller:

> This feature decreases the size of the window displaying CRATER.

Cycle pages:

> This feature cycles through each of the system pages, displaying   them momentarily.

Cycle period:

> This feature sets the amount of time the cycled pages are displayed from 2-20 sec.

SMT Monitoring:

Turn Monitoring On:

> Activates the SMT Monitoring capability by generating the appropriate smt_monitoring.xml file.
>
> The following lkine of code is used:
>
> sdaq type="MONITOR" readout="smt_crates" parasitic="yes"/-->

Turn Monitoring Off:

> Deactivates the SMT Monitoring capability by generating the appropriate smt_monitoring.xml file. The following line of code is used:
>
> <!--sdaq type="MONITOR" readout="smt_crates" parasitic="yes"/-->

Each system has a dedicated page. All pages L1, L2, MUON, CAL, CFT, and SMT contain the following buttons. STT will be included at a later date.

Turn All "system" Crates On/Off:

This button selects all of the crates listed on the page for either including them in the run (Red for ON) or excluding them in the run (Grey for OFF)

Save Configuration for "system":

This button only generates the "system"_readout.xml file for an individual system based on the page selected.

Special Features

L2

Unlike other systems, the L2 readout files are a little different. When a crate is taken OUT of the run, it is actually put into the readout file as a ALL_NOVBD device. A crate IN the run is considered an ALL_VBD device. The difference is that the ALL_NOVBD receives triggers but is not read out by L3 whereas, a ALL_VBD device receives triggers and is readout by L3. All crates are downloaded, included Null Devices, regardless of their state.

The L2 subpage contains an information box which describes the links between L2 crates and other system crates.

MUON

Turn All PDT Crates On/Off:

These buttons select only the PDT Muon crates. They are associated with geographic sectors X34 to X3B. The same color convention is used, Red for ON or IN the run, Grey for OFF or OUT of the run.

Null Devices

Within the SMT and CFT systems, Sequencer Crates (Null Devices) are linked to each of the readout crates. CRATER automatically includes the appropriate Sequencer crates when SMT or CFT crates are selected.